

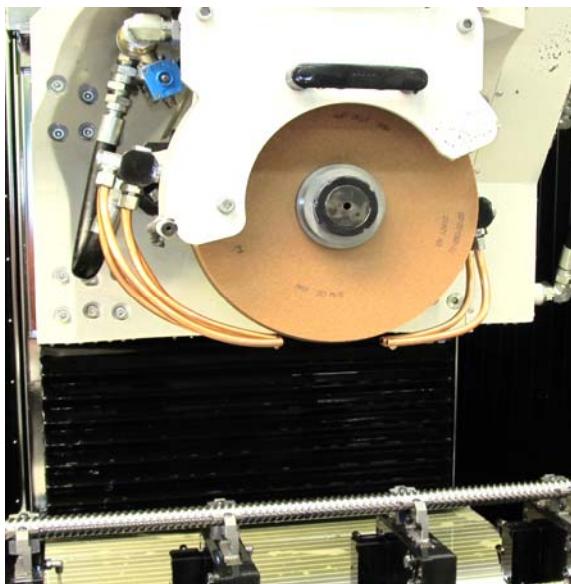
## Thread shaft grinding

A21-010

Thread shafts are used in numerous applications in machinery, automotive and aviation industries.

Current example is an actuator shaft made out of steel. It has about 1000mm thread length with 4 starts and 24° lead angle. Grinding is performed with a dressed wheel. Wheel form calculation based on geometry inputs and dressing are performed directly on the machine.

The shaft is ground in 3-4 passes with around 1mm stock removal and 1 finishing pass if necessary.



### 1. Cycletime for Production

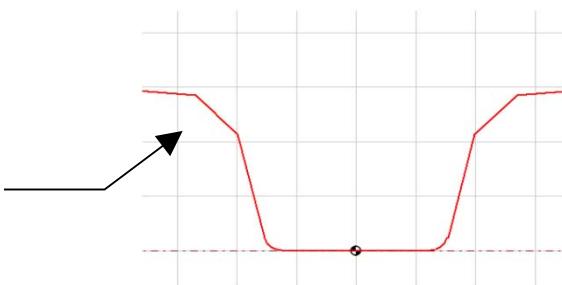
Workpiece:							
Diameter 25 mm, Length 1100mm, Groove depth 2.4mm, 4 thread starts Material Steel							
Operations	Profiling	Dress	Profiling	Dress	Profiling	Dress	Finishing
Feed rate [mm / min]	700	200	700	200	700	200	700
Infeed / pass [mm]	1.000	0.040	0.700	0.040	0.700	0.040	0 - 0.005
Cutting feed [m/s]	30	30	30	30	30	30	30
Used wheels							
Cycle time [min]	17	2	17	2	17	2	17
Total cycle time	74 min						

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

### 2. Used Grinding Wheels

14A1 Ø350 C60 (profiled)

Example of wheel profile



### 3. Machine and Software Requirements

Machines: 5 axis CNC grinder : Corvus C360/500 Coolant: Synthetic Oil, pressure 6 bar  
Control: Fanuc 31i Software: Quinto 5

Accessories:

Responsible engineer: SIW, 09.2013

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